

# **The Latest From USEPA Region 9**

## **2017 CALIFORNIA DESERT AIR WORKING GROUP**

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U.S. EPA, Region 9

November 7, 2018





- EPA National Directions
- Region 9 National Ambient Air Quality Standard (NAAQS) Nonattainment Areas (NAA) & Trends
- Region 9 State Implementation Planning Update
  - Ozone and other NAAQS
  - Regional Haze Rule
  - Incentive Programs
- Permitting Update
  - National Reform
  - Region 9 Priorities
- Other National Actions
- Region 9 Monitoring Update
  - Exceptional Events
  - Air Quality Sensors
- Wildfire

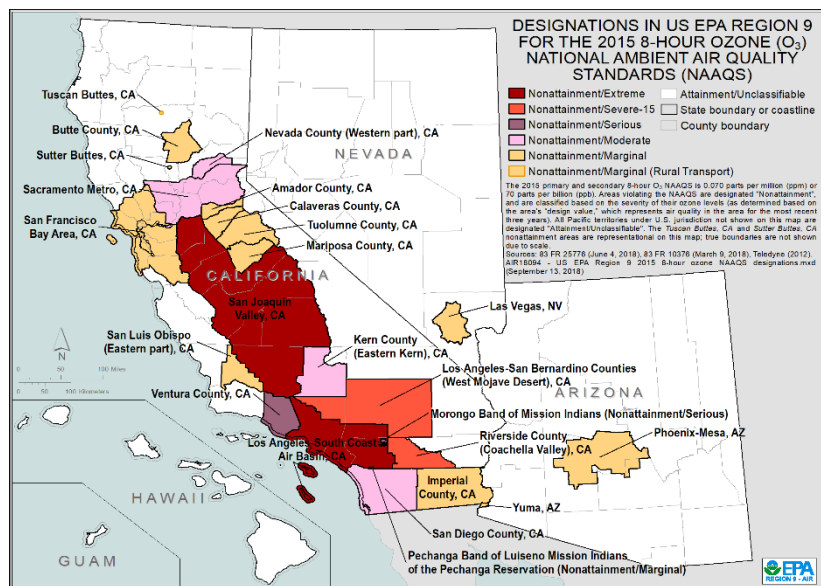
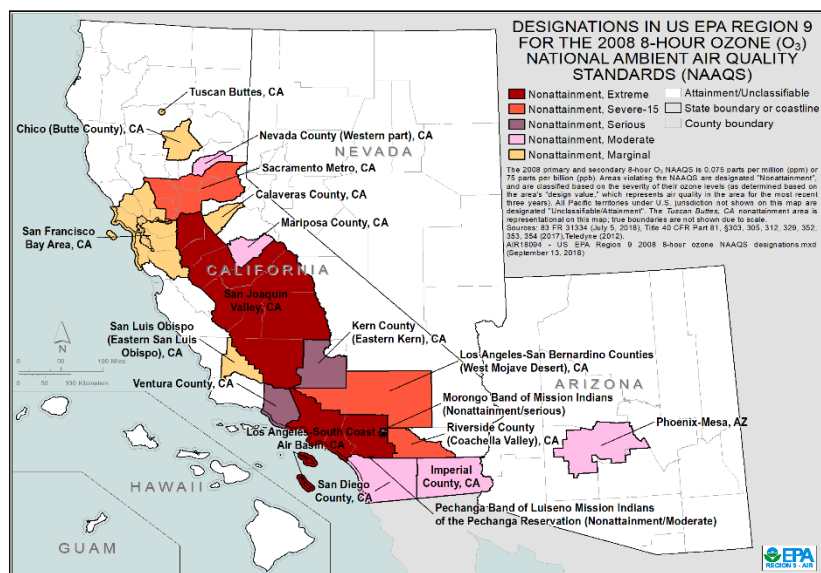




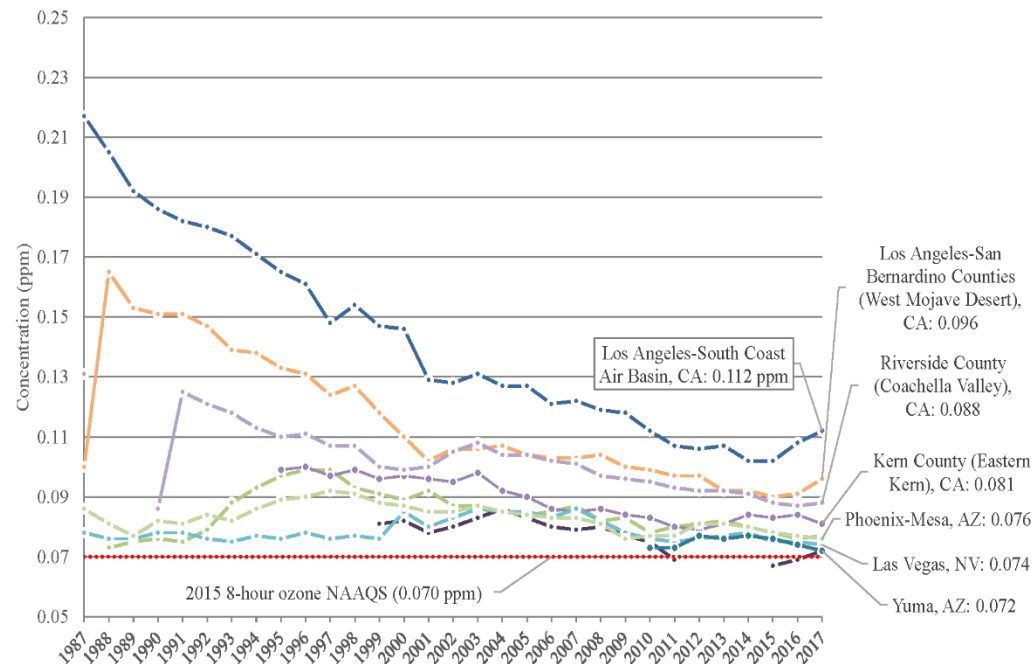
- FY 2018-2022 Strategic Plan
  - Deliver Real Results
  - Cooperative Federalism
  - Rule of Law
- Clean Air Priority Goal: Reduce Number of Nonattainment Areas by 2022
- Permitting Reforms and Efficiencies
- Organizational Efficiencies and Realignment
- FY19 Budget



# Region 9 NAA's: 2008 8-Hr Ozone



## 8-HOUR OZONE ( $O_3$ ) DESIGN VALUE CONCENTRATIONS IN ARID NONATTAINMENT AREAS (1987-2017)



Source: US EPA's Air Quality Systems (AQS) database (July 24, 2018).

The 2015 national ambient air quality standard (NAAQS) for 8-hour ozone is 0.070 parts per million (ppm). The design value is a calculation of each year's fourth-highest day's recorded values, averaged over a three-year period at an air quality monitor. X-axis labels represent the last year of a monitor's three-year time period. All incomplete and exceptional event data (e.g., high winds and wildfires) that EPA has concurred on have been excluded from design value calculations.

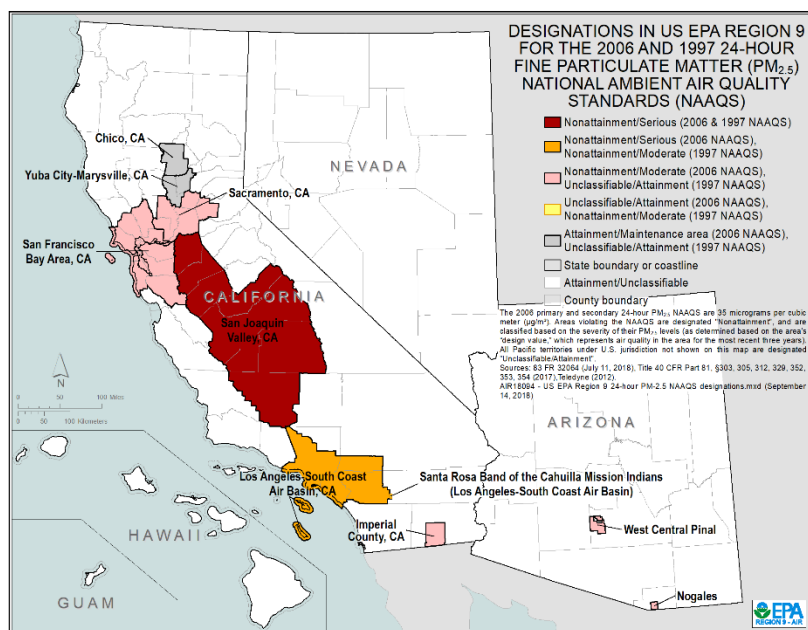
AIR19012 - 8hr ozone.xlsx (November 2, 2018)



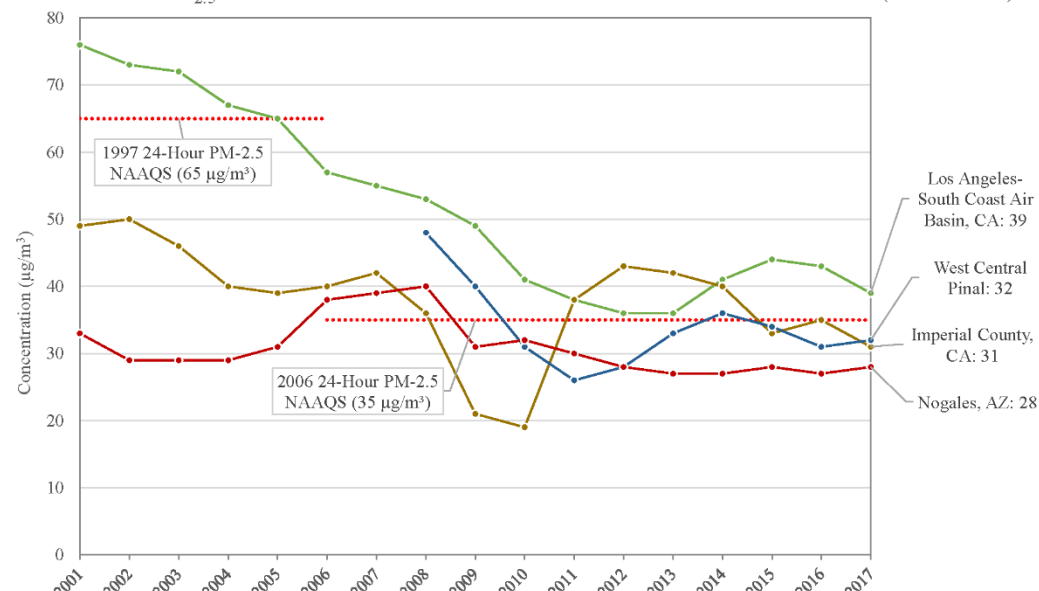
NAAQS	National NAA's	Region 9 NAA's	Region 9 % of National
8hr Ozone (2008)	38	19	50%
8hr Ozone (2012)	51*	24	47%



# Region 9 NAA's: PM<sub>2.5</sub>



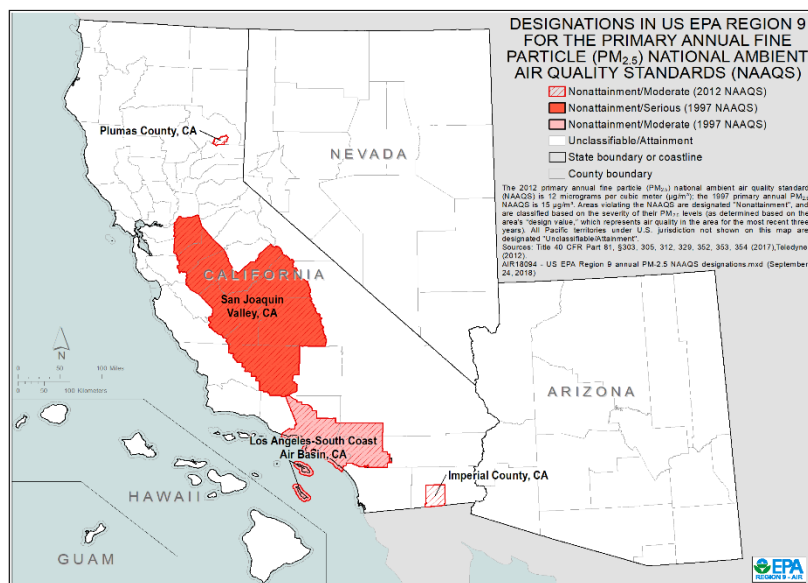
24-HOUR PM<sub>2.5</sub> DESIGN VALUES IN ARID NONATTAINMENT AREAS (2001-2017)



Source: US EPA's Air Quality Systems (AQS) database (July 24, 2018).

The 2006 national ambient air quality standard (NAAQS) for 24-hour fine particulate matter (24-hour PM<sub>2.5</sub>) is 35 micrograms per cubic meter (µg/m³). The design value for 24-hour PM<sub>2.5</sub> is the three-year average of third-highest daily values. X-axis values represent the last year of a monitoring site's three year time period. All incomplete/invalid data and exceptional event data (e.g., high winds and wildfires) that EPA has concurred on have been excluded from design value calculations.

AIR19012 - PM25.xlsx (November 2, 2018)



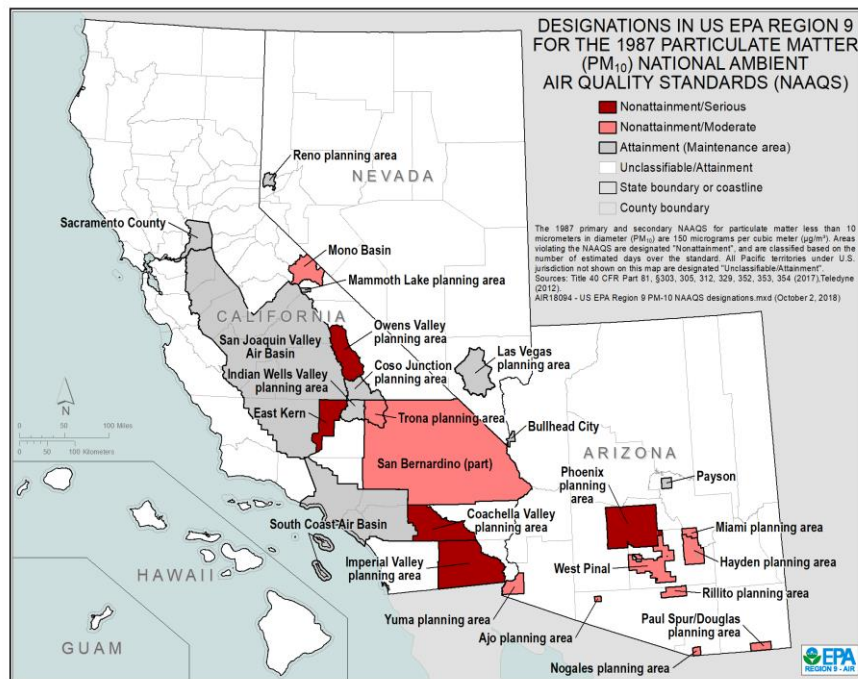
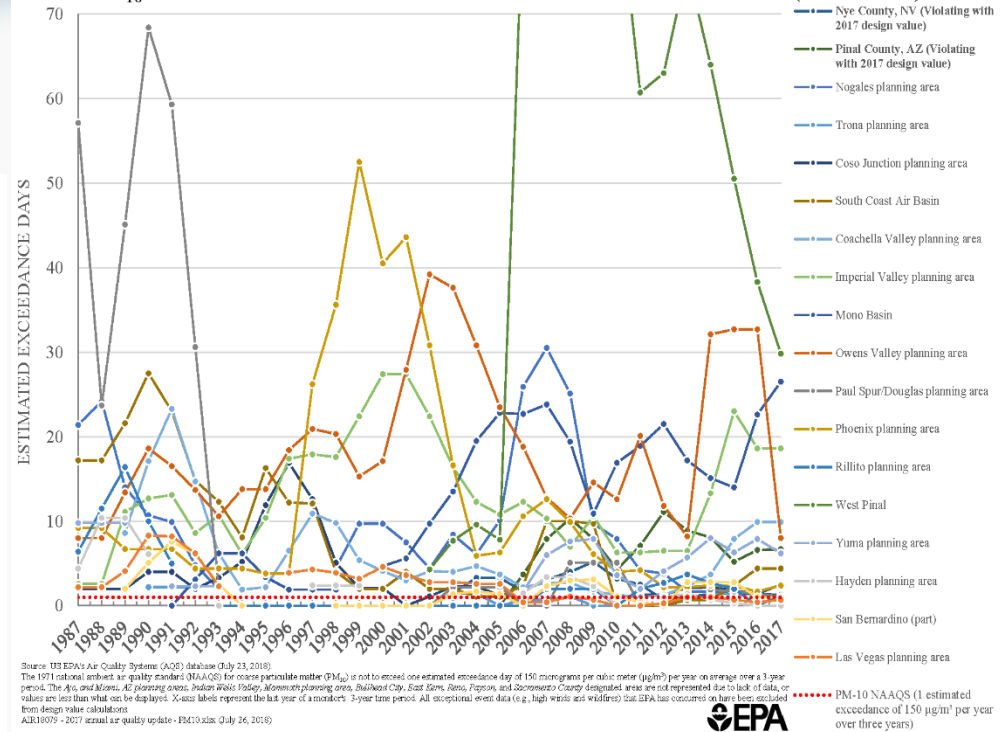
NAAQS	National NAA's	Region 9 NAA's	Region 9 % of National
Annual PM <sub>2.5</sub> (2012)	9	4	44%
Annual PM <sub>2.5</sub> (1997)	5	2	40%
24hr PM <sub>2.5</sub> (2006)	14	7	50%



# Region 9 NAA's: PM10



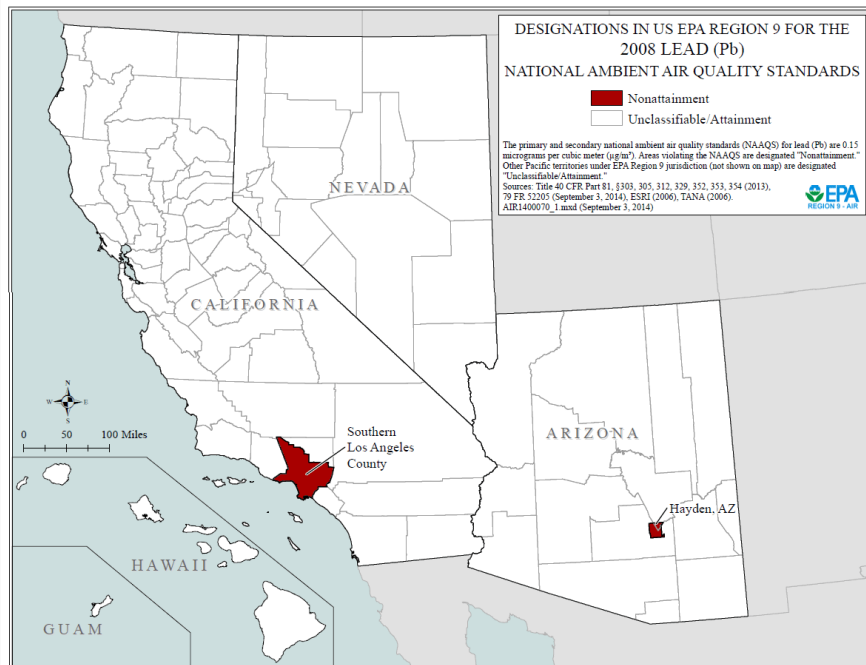
PM<sub>10</sub> DESIGN VALUES IN ARID NONATTAINMENT AREAS (1987-2017)



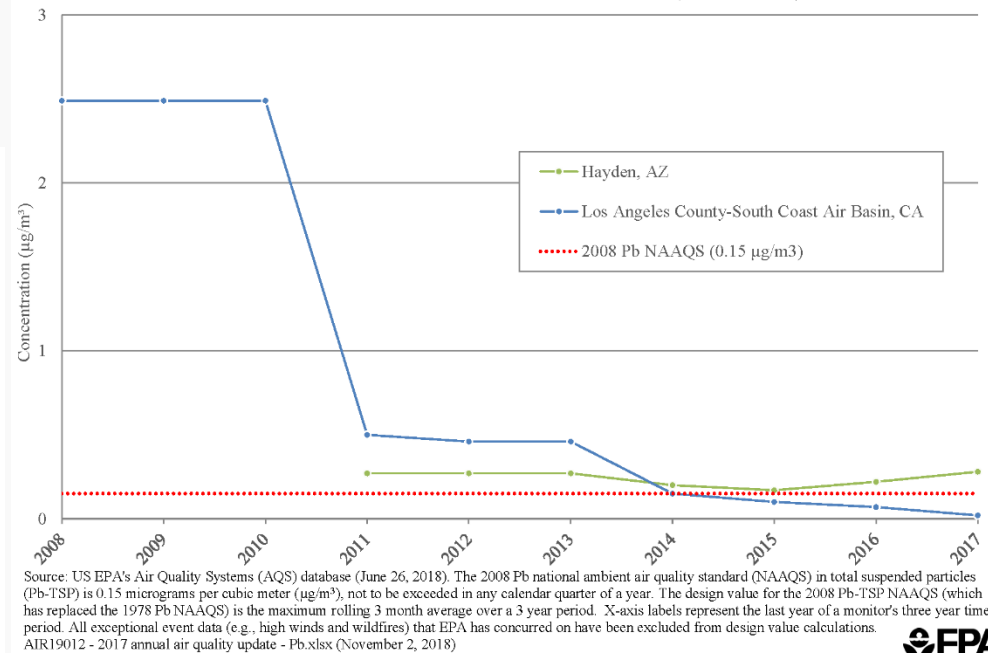
NAAQS	National NAA's	Region 9 NAA's	Region 9 % of National
24hr PM10	34	16	47%



# Region 9 NAA's: Lead



2008 LEAD (Pb) NAAQS DESIGN VALUE CONCENTRATIONS  
IN ARID NONATTAINMENT AREAS (2008-2017)



NAAQS	National NAA's	Region 9 NAA's	Region 9 % of National
Lead	11	2	19%



# Region 9 SIP Implementation: Ozone



- 2008 Ozone Moderate area attainment date July 20, 2018 (2015-2017 air quality data)
  - EPA must make determinations of whether Moderate nonattainment areas attained the 2008 standard by the July 20, 2018 attainment date
  - Final action anticipated by statutory deadline of January 20, 2019, will include new SIP revision deadline for reclassified Serious areas
- 2008 Ozone Serious area attainment date July 20, 2021 (2018-2020 air quality data)
- *South Coast Air Quality Management District v. EPA* re: SIP Requirements Rule (Ct. Decision 2018)
  - Vacated RFP alternative baseline years; anti-backsliding for bump-ups; transportation conformity
  - Uniquely affects CA areas that used 2012 as baseline year
- 2015 Ozone Designations finalized April 30, 2018.
  - Interstate Transport SIP's due October 1, 2018; CA, NV, AZ submitted 8



# Region 9 SIP Implementation: Other NAAQS



- *Bahr v. EPA Decision*
  - Contingency Measures
- 2006 and 2012 PM<sub>2.5</sub> Plans under review
- 2008 Lead NAAQS
  - Hayden AZ plan approved October 31, 2018
- International Transport
  - 179B guidance under development
  - Imperial 2008 Ozone NAAQS 179B plan under review
- SIP Actions
  - 65 in FY18; 50 Planned in FY19
  - Work proactively with districts/states
  - State Planning Electronic Collaboration System (SPeCS)



# Region 9 SIP Implementation: Regional Haze



- EPA Finalized the Regional Haze Rule on January 10, 2017.
  - Petitions for review were filed in the DC Circuit. EPA also received petitions for reconsideration.
  - On January 17, 2018 EPA announced its decision to revisit aspects of the 2017 rule revisions.
- On September 11, 2018 EPA released the Regional Haze Reform Roadmap to set out principles and to provide updates on related to tools and guidance for the second planning period (2018-2028).
  - Final recommendations on impaired days and adjusting glidepath – Fall 2018
  - Natural visibility conditions estimate – Spring 2019
  - Updated visibility modeling (incl. estimates of UA/International source contributions) – Spring/summer 2019
  - Final guidance for regional haze SIP development – Spring 2019
- EPA Region 9 working with WESTAR/WRAP and states to plan the development of SIPs for the second planning period.



# Region 9 Incentive Programs



- SIP Credit for Incentive Programs Policy Development
- Diesel Emission Reduction Act Funding and West Coast Collaborative (WCC) Engagement
- WCC Medium and Heavy Duty Alternative Fuel Infrastructure Corridor Coalition: I-5
- Clean Air Technology Initiative/Advanced Technology
- VW Settlement
- Targeted Airshed Grants



# Permitting: National New Source Review (NSR) Actions

32

## Completed Actions

- Actual-to-Projected-Actual Applicability Test Guidance Memorandum
- Project Emissions Accounting Memo
- Source Aggregation Guidance, Meadowbrook Letter, Draft Guidance on Interpreting Adjacency
- PM<sub>2.5</sub> and Ozone SILs Guidance
- Once-In-Always-In Policy Change

## On-Going Work

- Project Aggregation Reconsideration
- Ambient Air Guidance
- Project Emissions Accounting Rulemaking
- Rulemaking on Treatment of Biomass for Permitting





# Permitting: Region 9 Priorities



- Working with Districts to adopt revised rules--THANKS!
- NSR Permit related rulemaking actions FY18: 17
- NSR Permit related rulemaking actions FY19: 13
- Withdrawals in FY18: 5
- Tribal Permits
- E-Permitting





- 2015 New Source Performance Standard (NSPS) for Residential Wood Heaters
  - Proposed revisions at OMB
- Affordable Clean Energy (ACE) Rule regulating greenhouse gases from existing coal-fired power plants
  - Proposed 8/31/18; Comment period closed 10/31/18
  - Replaces 2015 Clean Power Plan
- 2016 Municipal Solid Waste Landfill NSPS revisions
  - Proposed 10/23/18
  - Extend plan submission deadline to 8/29/19; align with ACE
- Light-Duty Vehicle Safer Affordable Fuel Efficient (SAFE) Vehicles Proposed Rulemaking
  - National Highway Transportation Safety Administration/EPA joint rulemaking
  - Proposed 8/24/18; Comment Period Closed 10/26/18



# Region 9 Monitoring: Exceptional Events



- **Region 9 continues to engage with stakeholders to identify opportunities to improve process and efficiency**
  - **Prioritize EE actions needed for upcoming regulatory action**

## Exceptional Events: Implementation Resources

### EPA Resources Available Online

- Updated FAQs
- Wildfire-Ozone Guidance
- 2007-to-2016 Rule Crosswalk
- Best Practices for Multi-State Exceptional Events Demonstrations
- Mitigation Plan Checklist
- Example demonstrations and EPA responses

*For resources search "EPA Exceptional Events"*

### Additional Resources Coming Soon

#### **By End of 2018:**

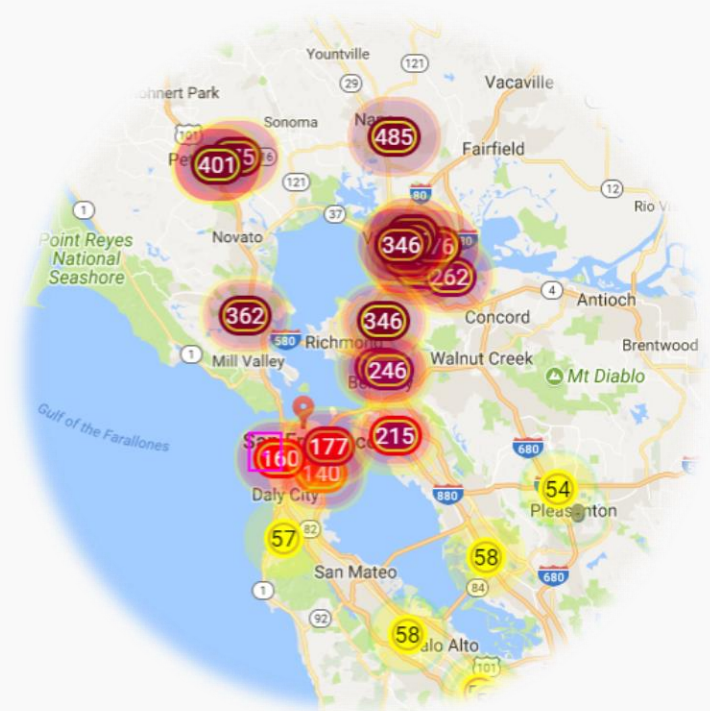
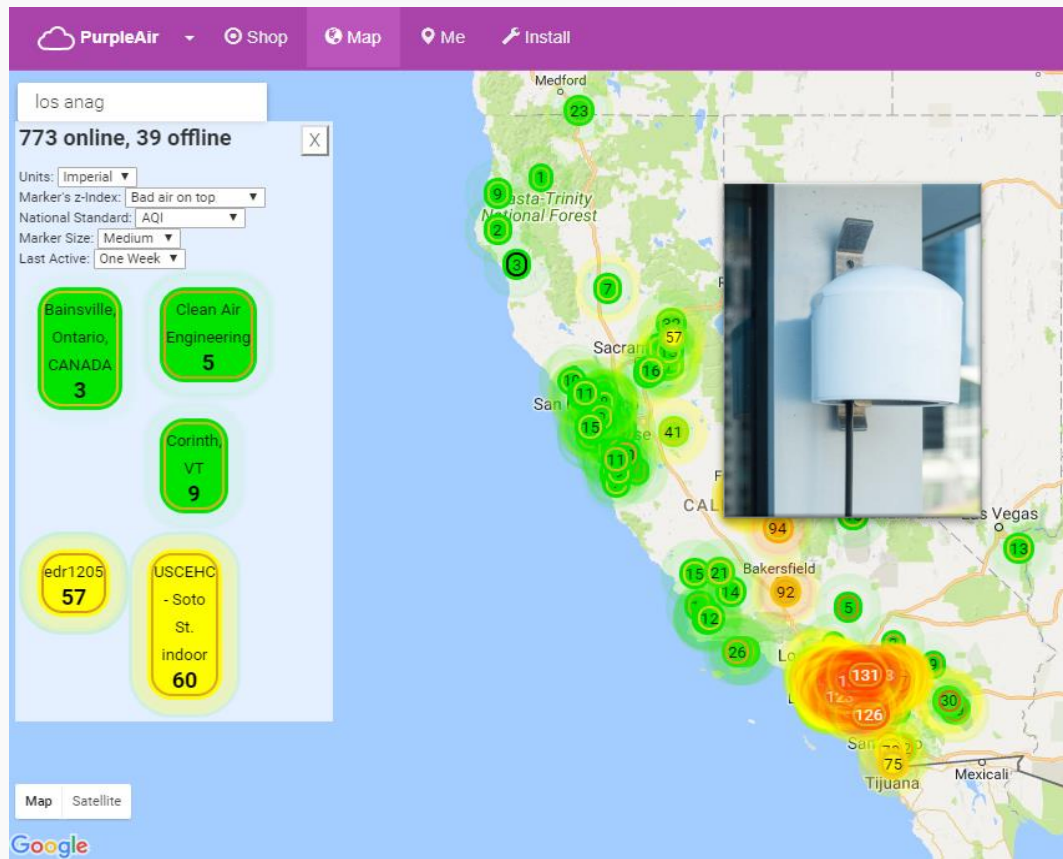
- Updated High Winds Guidance
- Stratospheric Ozone Intrusion Guidance
- Clarification Memo on Data Consideration (aka Alternate Paths)
- Webpage updates with new external resources and easier navigation
  - including great suggestions from Idaho – thanks!

#### **In Early 2019:**

- Prescribed Fire-Ozone Guidance
- Electronic



# Region 9 Monitoring: Sensor Technology



Purple Air PM<sub>2.5</sub> Sensor Map during North Bay Wildfires – Oct. 10, 2017

<https://www.purpleair.com/>; Nov. 13, 2017



# Region 9 Monitoring: Sensor Technology



- Promote Data Quality
  - Guidance is being discussed to clarify appropriate uses of secondary data from sensors
    - <https://www.epa.gov/air-research/presentations-deliberating-performance-targets-air-quality-sensors-workshop>
- Workshops
- Literature and Market Review
- Technology Development and Evaluation
- Tool Development
- Training
- Local Projects



# Region 9 Monitoring: Sensor Technology Projects



Several research projects aimed at testing the performance of air sensors under a variety of applications:



- wildfire smoke events
- tribal wood smoke impacts
- localized, near-road and urban pollution sources

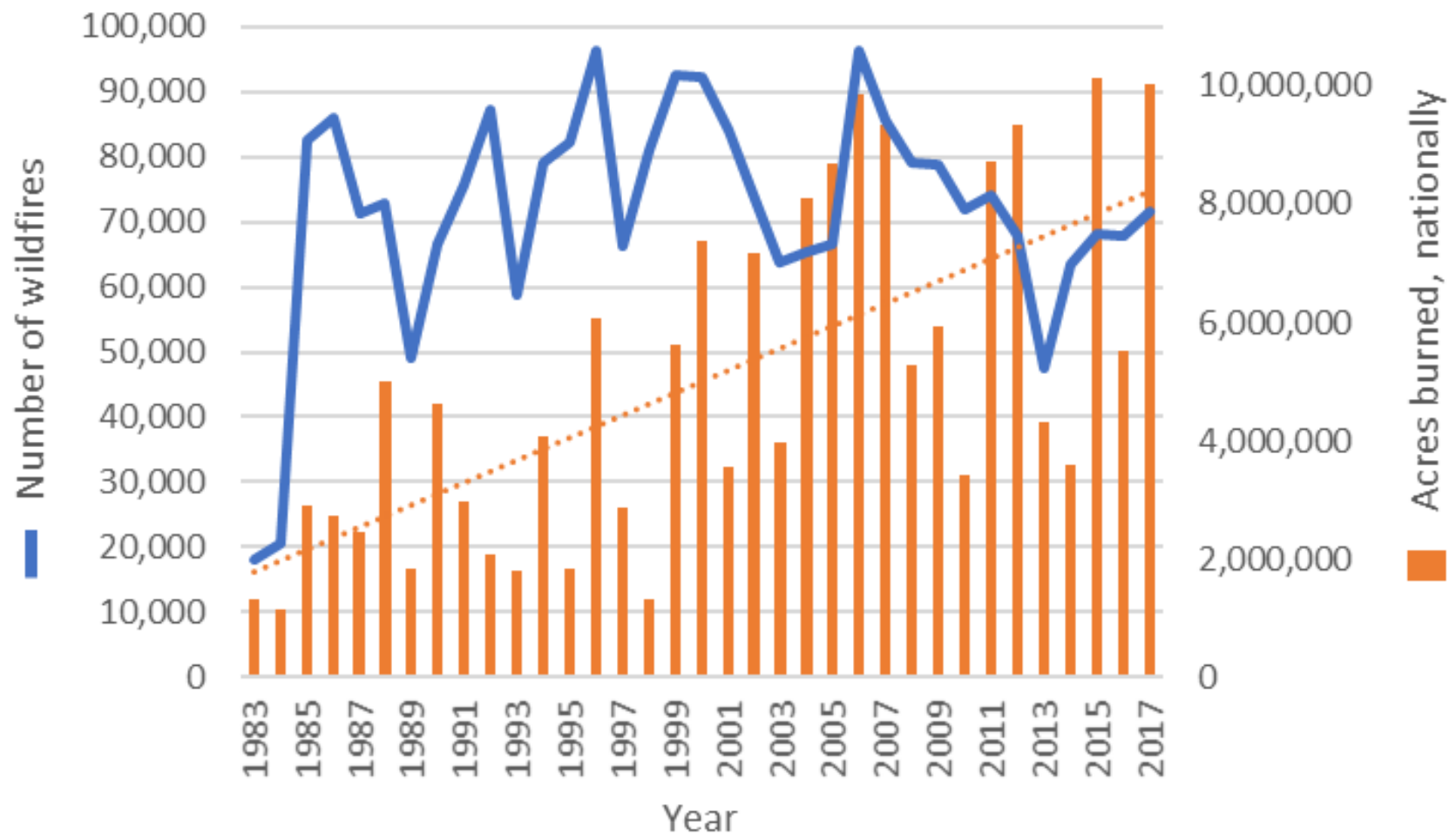


## Wildland Fire Sensors Challenge





# Wildfire: National Trends, 1983-2017



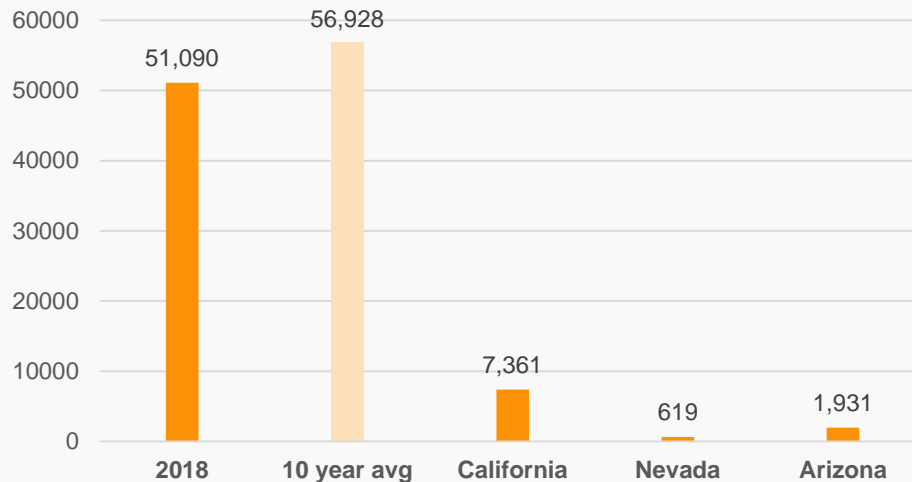
Source: National Interagency Fire Center Data. [https://www.nifc.gov/fireInfo/fireInfo\\_stats\\_totalFires.html](https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html)



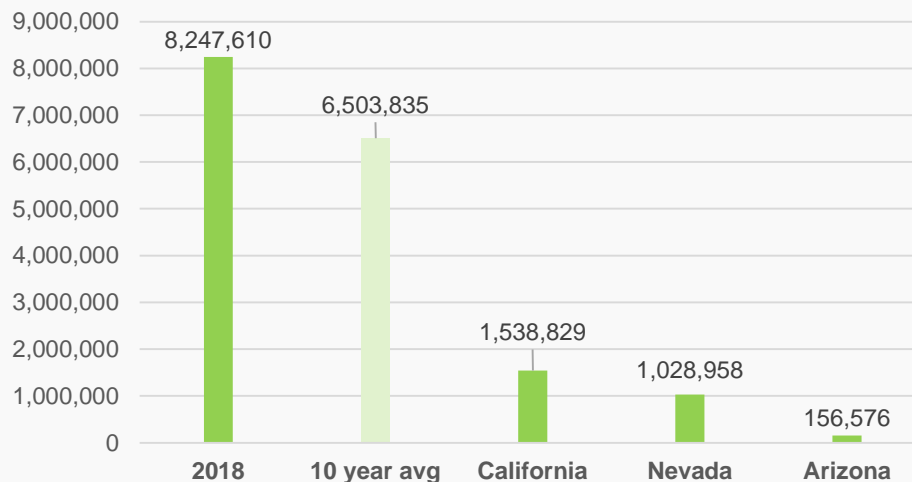
# Wildfire: 2018 Season



Number of Wildfires (2018, YTD)



Number of Acres Burned (2018, YTD)



## National – 2018 YTD:

51,090 wildfires

8.25 million acres

## California – 2018 YTD:

7361 wildfires

1.54 million acres

Largest fire in CA history: 459,123 acres

## Nevada – 2018 YTD:

619 wildfires

1 million acres

## Arizona – 2018 YTD:

1931 wildfires

156,576 acres

### Data Sources:

<https://dffm.az.gov/intelligence>

<https://gacc.nifc.gov/gbcc/predictive/products/gbytd-byState.htm>

<https://www.nifc.gov/nicc/sitreprt.pdf>



# Wildfire: Widespread Impacts in CA



**CalFire Statewide Map of Wildfires in CA, as of 11/2/2018**

**NASA Satellite Imagery on Aug 6 shows smoke blanketing much of CA**

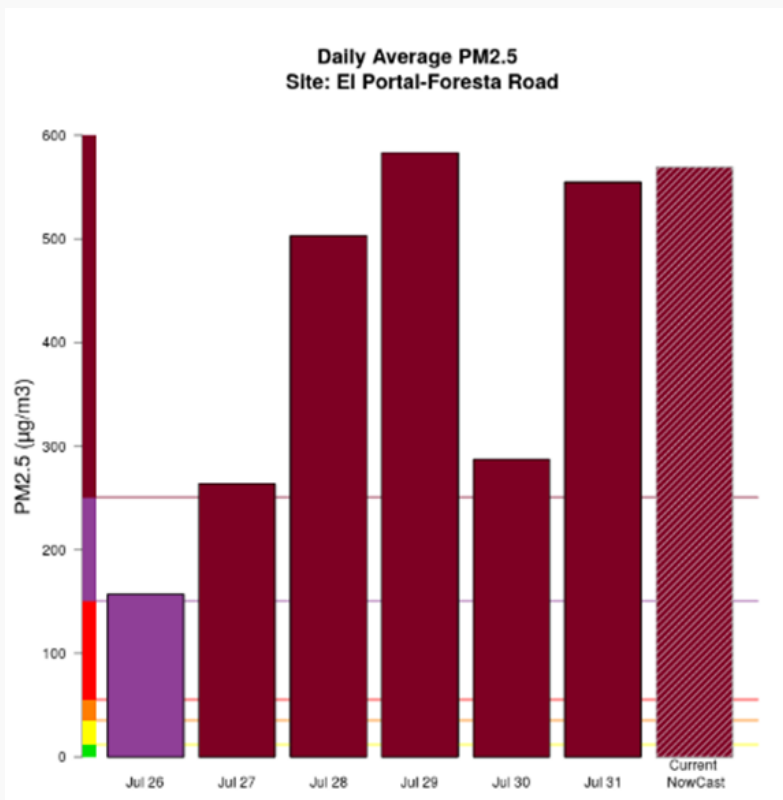




# Wildfire: Health and Air Quality Impacts



## Daily Average AQI in El Portal during Ferguson Fire



## Smoke from Ferguson Fire @ Woodland Elementary School in Bootjack, CA

Credit: Ali Kamal, US EPA



# Wildfire Resources: USFS Air Resource Advisors



## Monitor PM2.5      Daily Smoke Outlooks



**Air Quality Report**  
**Frye Fire**  
*Forecast conditions represent impacts from smoke from the Frye Fire. Contributions from ozone and other pollutants and impacts from other fires are not reflected.*

**Issue Date: 6/29/2017**  
**Prepared by: Lauren Maghnan**

**Fire:** Fire activity on the Frye Fire has continued to be moderate with some smoldering in the upper elevation timber.

**PM2.5 Impacts June 29:** Smoke is expected to disperse towards the east side of Mount Graham with moderate levels expected in Cactus Flat throughout the day. Although it may be visible, ground level smoke is expected to be minimal in Safford, Thatcher, Duncan, and Clifton, and Fort Grant. In Cactus Flat, smoke may be moderate to USG in the early morning (2am-10am) morning of June 28 and 29.

**Smoke Impacts June 30:** Cactus Flat is expected to have periods of moderate smoke impacts during the evening and early morning (2am-10am). Fort Grant may experience USG levels from 2am to 10am on June 30. All other areas are expected to have good air quality throughout the day.

Expected PM2.5 Community Impacts

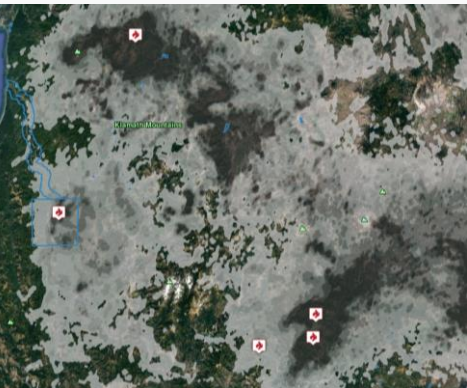
Site	Yesterday Observed Midnight 24-Hr AQI 28 June 2017	Today Forecast 24-Hr AQI 29 June 2017	Tomorrow Outlook 24-Hr AQI 30 June 2017	Worst Time of Day Impacts AQI and Period
Fort Grant	GOOD	MODERATE	MODERATE	Fort Grant may see light to moderate smoke in the evening 6/29, and morning 6/30.
Cactus Flat	GOOD	MODERATE	MODERATE	Periods of moderate smoke throughout the day as smoke blows towards Cactus Flat. Although visible, significant smoke is not expected to reach ground level today.
Safford	GOOD	GOOD	GOOD	

**Disclaimer:** Conditions may change quickly; these projections are based on anticipated weather and fire activity. Sensitive groups including individuals with asthma, lung or heart disease, children, older adults, and pregnant women should take precautions to avoid exposure to smoke. If you feel as though you are having health effects from smoke, see your doctor or health professional as needed. In some cases your eyes are your best tools. If it is smoky outside you are being impacted. Use caution when driving in or around smoky areas.

Air Quality Index	Actions to Protect Yourself
Good	Unusually sensitive individuals should consider limiting prolonged or heavy exertion.
Moderate	People within Sensitive Groups should consider limiting prolonged and heavy outdoor exertion. Everyone else may find relief by limiting prolonged or heavy outdoor exertion.
Unhealthy for Sensitive Groups	People within Sensitive Groups should avoid all prolonged or heavy outdoor exertion. Everyone else should consider limiting prolonged or heavy outdoor exertion.
Unhealthy	Everyone should avoid prolonged or heavy outdoor exertion.
Very Unhealthy	Everyone should avoid all prolonged or heavy outdoor exertion.
Hazardous	Everyone should avoid all prolonged or heavy outdoor exertion.

Interagency Real Time Smoke Monitoring: <https://tools.airfire.org/monitoring3/>  
 AirNow: <http://airnow.gov>

## Model Smoke

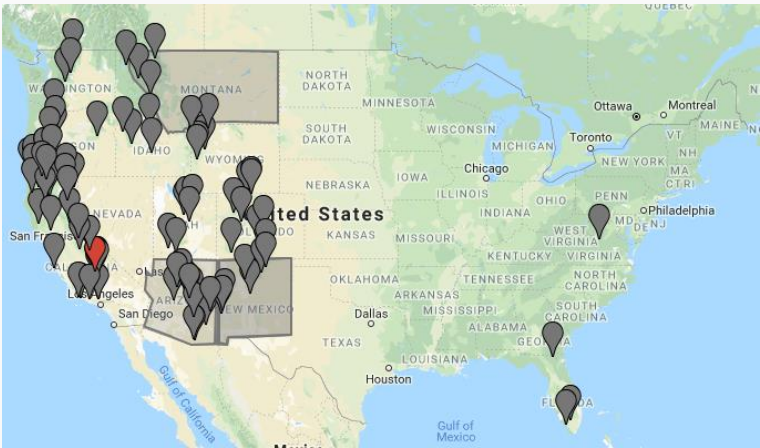


## Public meetings



## Find ARA for Fire Near You

<https://sites.google.com/firenet.gov/wfaqrp-external/air-resource-advisors/deployments>





# Wildfire Resources: SmokeSense App



## Smoke Sense App for iPhone and Android



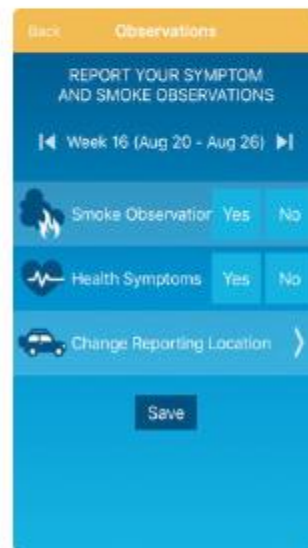
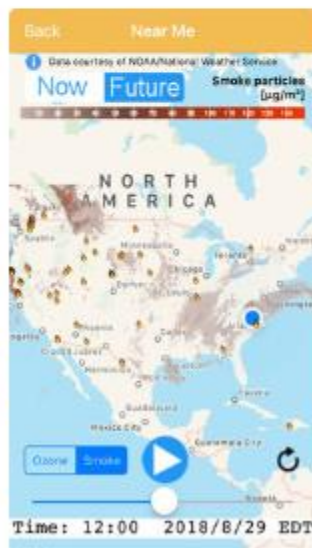
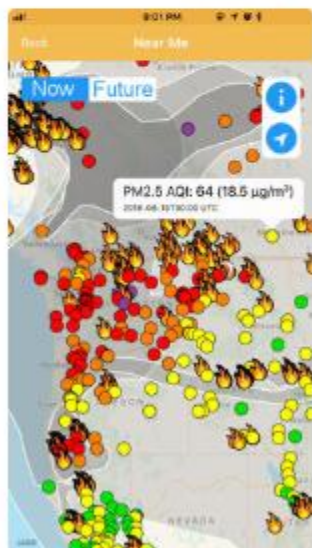
**EPA Smoke Sense** 12+

United States Environmental Protection Agency (USEPA)

★★★★☆ 3.4, 17 Ratings

Free

Screenshots iPhone iPad



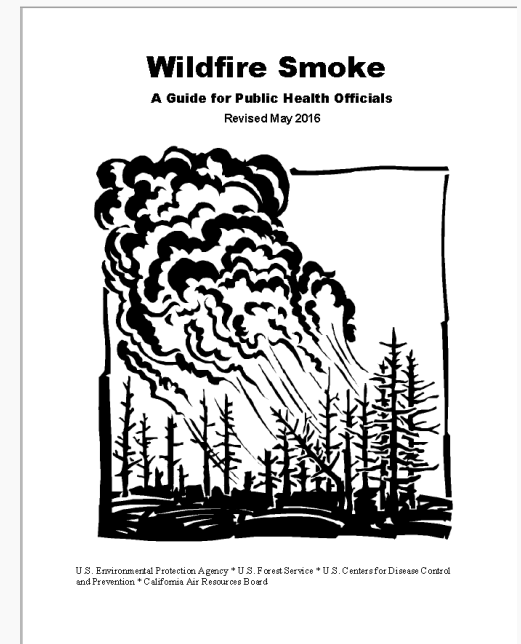
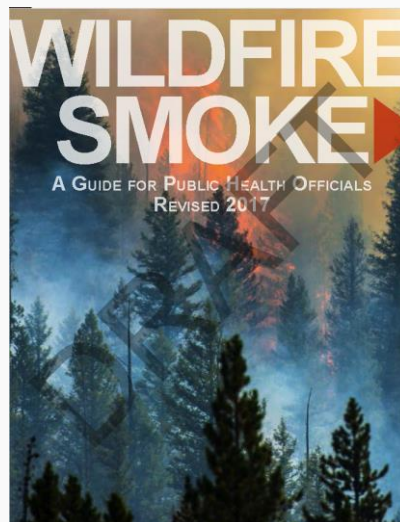


# Wildfire Resources: Wildfire Smoke Guide

- A collaborative document produced by CDPH, CARB, US EPA, USFS, University of Washington, public health agencies.
- Evidence-based information, advice, and tools for public health officials to use during wildfire smoke events

[https://www3.epa.gov/airnow/wildfire\\_may2016-revised.pdf](https://www3.epa.gov/airnow/wildfire_may2016-revised.pdf)

**Revision with New  
Tools and Advice  
Coming Soon**





# Wildfire Resources: Wildfire Guide Factsheets



## WILDFIRE SMOKE FACTSHEET

### Reduce Your Smoke Exposure



When wildfires create smoky conditions, there are things you can do, indoors and out, to reduce your exposure to smoke. This factsheet provides information for older adults, and people with chronic health conditions.

#### Reduce smoke exposure

- Stay inside. When wildfires are burning nearby, stay indoors. Close windows and doors. Use air conditioning if you have it. If you have a portable air conditioner, use it. Do not fry or grill outdoors. Do not increase air conditioning.
- Do not add to the smoke. Do not burn candles, incense, or other items that create smoke. Do not fry or grill outdoors. Do not increase air conditioning.
- Use a portable air purifier. If you have a portable air purifier, use it. Do not use a central air conditioner.



## WILDFIRE SMOKE FACTSHEET

### Protecting Children from Wildfire Smoke and Ash



#### Background

- Children are especially at risk for health effects from exposure to wildfire smoke and ash, mostly because their lungs are still growing.
- Wildfire concerns include the fire itself, the smoke and ash, and the chemicals from materials that have burned, such as furniture.
- Smoke can travel hundreds of miles from the source of a fire. Pay attention to local air quality reports during fire season, even if no fire is nearby.

#### Health Effects from Wildfire Smoke and Ash

- Children who breathe in wildfire smoke and ash can have chest pain and tightness; trouble breathing; wheezing; coughing; nose, throat, and eye burning; dizziness; or other symptoms.
- Children with asthma, allergies, or chronic health issues may have more trouble breathing when smoke or ash is present.

#### Preparing for Wildfires

- Pay attention to local air quality reports. Stay alert to smoke-related news coverage and public health advisories.
- Look up your local [Air Quality Index \(AQI\)](http://www.airnow.gov) web site. [AirNow](http://www.airnow.gov) ([www.airnow.gov](http://www.airnow.gov)) web site.
- If [Enviroflash](http://www.enviroflash.info/) is available for your area, sign up for air quality alerts. (<http://www.enviroflash.info/>).

## WILDFIRE SMOKE FACTSHEET

### Protect Your Lungs from Wildfire Smoke or Ash



Wildfire smoke and ash can irritate your eyes, nose, and throat. It can also make it hard to breathe.

#### Protecting Your Health

One of the most effective ways to protect your health during wildfire emergencies is to stay indoors. If you must go outside, wear a mask. This is especially important if you have heart or lung disease and are at high risk for health effects. Reducing your exposure to smoke and ash is another way to reduce your risk. Consider temporary relocation to a less smoky area if possible. By limiting your exposure to smoke and ash, you can reduce your risk of health effects. One of these ways, you may want to wear a respirator.

#### Factors Can Help Protect



P100 respirators can help protect you from smoke or ash. Straps must go over the head and under the ears.

## WILDFIRE SMOKE FACTSHEET

### Protect Yourself from Ash



Protect yourself from harmful ash when you clean up after a wildfire. Cleanup work can expose you to ash and other products of the fire that may irritate your eyes, nose, or skin and cause coughing and health effects. Ash inhaled deeply into lungs may cause asthma attacks and make it difficult to breathe. Ash is made up of larger and tiny particles (dust, dirt, and soot). Ash deposited on surfaces both indoors and outdoors can be inhaled if it becomes airborne when you clean up. Ash from burned structures is generally more hazardous than forest ash.

#### Avoid Ash Exposure

**Avoid direct contact with ash.** If you get ash on your skin, in your eyes, or in your mouth, wash it off as soon as you can.

**People with heart or lung disease,** including asthma, older adults, children, and pregnant women should use special caution around ash.

**Children and pets:** Children should not be nearby while you clean up ash. Do not allow children to play in ash. Clean ash off all children's toys before use. Clean ash off pets and other animals. Keep pets away from contaminated sites.

#### Recommended Actions

**Clothing:** Wear gloves, long-sleeved shirts, long pants, shoes and socks to avoid skin contact. Goggles are also a good idea. Contact with wet ash can cause chemical burns or skin irritation. Change your shoes and clothing before you leave the cleanup site to avoid tracking ash offsite, into your car, or other places.



Use an N95 respirator and avoid skin contact with ash.

#### Protecting your lungs: Wear a tight-fitting respirator that filters ash particles from the air you breathe.

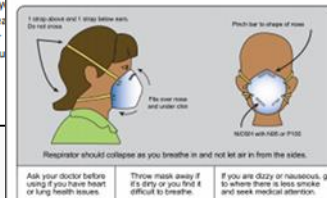
Select a respirator approved by NIOSH and labeled for use with ash. These are available online, in stores, and at pharmacies. Make sure the size that can be worn with your nose and mouth. Surgical masks are not designed to seal around your face and do not protect you from ash. Do not use a respirator if you have heart or lung disease or if you are pregnant.



The right respirator\* and proper fit can reduce your exposure to wildfire smoke.

Cloth (wet or dry), paper masks, and tissues will NOT filter out wildfire smoke. Look for respirators (masks) marked NIOSH with N95 or P100. They can be found online, in hardware, home repair, or drugstores.

\*Respirators are not designed to fit children. Facial hair prevents proper fit and reduces effectiveness.



Use a respirator only after first trying other, more effective methods to avoid smoke. That includes staying indoors and reducing activity. When possible, people at risk should move away from the smoke area.

## WILDFIRE SMOKE FACTSHEET

### Indoor Air Filtration



When wildfire smoke gets inside your home it can make your indoor air unhealthy, but there are steps you can take to protect your health and improve the air quality in your home. Reducing indoor sources of pollution is a major step toward lowering the concentrations of particles indoors. For example, avoid burning candles, smoking tobacco products, using aerosol products, and avoid using a gas or wood burning stove or fireplace. Another step is air filtration. This fact sheet discusses effective options for filtering your home's indoor air to reduce indoor air pollution.

#### Filtration Options

There are two effective options for improving air filtration in your home: upgrading the central air system filter, and using high efficiency portable air cleaners. Before choosing an option, it is important to understand filter efficiency.

**Central Air System Filter:** The minimum industry standard for filter efficiency is Minimum Efficiency Reporting Value, or MERV. MERV scale for residential filters ranges from 1 to 16. The higher the MERV rating, the more particles it can capture.

Filter (MERV 13-16) can reduce indoor particles by as much as 95 percent. Filters with a High Efficiency Particulate Air (HEPA) rating, (or MERV 17-20) are the most efficient. You may need to consult with a local heating and air technician or the manufacturer of your central air system to confirm which (or if) high efficiency filters will work with your system. If you can't switch to a more efficient filter, running the system continuously by switching the thermostat fan from "Auto" to "On" has been shown to reduce particle concentrations by as much as 24 percent.

## WILDFIRE SMOKE FACTSHEET

### Prepare for Fire Season



If you live in an area where the wildfire risk is high, take steps now to prepare for fire season. Being prepared for fire season is especially important for the health of children, older adults, and people with heart or lung disease.

#### Before a Wildfire

- Ask an air conditioning professional what kind of high efficiency filters to use in your home's system and how to close the fresh-air intake if your central air system or room air conditioner has one.
- Have a supply of N95 respirators and learn how to use them. They are sold at many home improvement stores and online.
- Organize your important items ahead of time, including financial and personal documents. Know your evacuation routes and where to go if you have to evacuate. Make sure to prepare your children, and consider your pets when making an evacuation plan.





# Wildfire Resources: Smoke Ready Toolbox

**EPA**  
United States  
Environmental Protection  
Agency

## Smoke Ready Toolbox for Wildfires

[epa.gov/air-research/smoke-ready-toolbox-wildfires](https://epa.gov/air-research/smoke-ready-toolbox-wildfires)

**AirNow.gov: Current Fire Conditions**  
Get current air quality conditions and learn what to do to protect your health from air pollution, including smoke from wildland fires. AirNow.gov provides local air quality forecasts using EPA's science-based air quality index. [https://airnow.gov/index.cfm?action=topics.smoke\\_wildfires](https://airnow.gov/index.cfm?action=topics.smoke_wildfires)

**How Smoke From Fires Can Affect Your Health**  
Learn who is more at risk from smoke, how to tell if it is affecting you, and steps you can take to protect your health. Learn what to do before, during and after a wildfire. <https://airnow.gov/index.cfm?action=smoke.index>

**Wildfire Smoke: A Guide for Public Health Officials**  
The guide is an easy-to-use resource that outlines whose health is most affected by wildfire smoke, how to reduce exposure to smoke, what public health actions are recommended, and how to communicate air quality to the public. The recommendations are based on science conducted by EPA and others. [https://www3.epa.gov/airnow/wildfire\\_may2016.pdf](https://www3.epa.gov/airnow/wildfire_may2016.pdf)

**Wildfire Smoke Exposure Infographics**  
Two infographics provide information on actions to take to reduce health risks from smoke exposure in areas with wildfire smoke and what respirator (mask) to wear if you have to go outside and how to wear it properly. [https://www3.epa.gov/airnow/smoke\\_fires/reduce-health-risks-with-wildfire-smoke.pdf](https://www3.epa.gov/airnow/smoke_fires/reduce-health-risks-with-wildfire-smoke.pdf) and <https://airnow.gov/static/topics/images/epa-infographic-respirator.jpg>

**Smoke Sense App**  
The Smoke Sense mobile app, developed by EPA researchers, enables you to get information on air quality and learn how to protect your health from wildland fire smoke. The app is being used in a citizen science study to determine how smoke from fires impacts public health. The app is available for anyone to use and can be downloaded on Android or iOS. [www.epa.gov/air-research/smoke-sense](http://www.epa.gov/air-research/smoke-sense)

**Particle Pollution and Your Patients' Health Course**  
Particle pollution, also known as particulate matter or PM, is the main component of haze, smoke, and dust. This course provides health professionals with knowledge they can share with patients to help reduce overall risk of PM-related health effects, particularly in individuals with heart and lung disease. [www.epa.gov/jpmcourse](http://www.epa.gov/jpmcourse)

**Online Healthy Heart Toolkit**  
Breathing in fine particulate matter (PM<sub>2.5</sub>) can trigger heart attacks, ischemic stroke, abnormal heart rhythms and worsen heart failure in people with cardiovascular disease or older adults with medical conditions that put them at risk. Particle pollution is a main component of smoke. Use the toolkit to protect your heart. <https://www.epa.gov/air-research/healthy-heart-toolkit-and-research>

**Healthy Heart**  
A heart healthy partnership for the nation's health

- Compendium of tools and resources for helping communities become “Smoke Ready”
- Resources in English and Spanish

## Caja de herramientas “Smoke Ready” (Listo para el humo) para incendios forestales

Los incendios forestales producen contaminación del aire que impacta la salud de la gente y otros aspectos de su vida cotidiana. La mayor frecuencia e intensidad de los incendios forestales en Estados Unidos están afectando adversamente la calidad del aire. Además, la exposición al humo generado por estos incendios está poniendo la salud de más personas en riesgo.

Los funcionarios de salud pública pueden utilizar los recursos en la Caja de herramientas “Smoke Ready” (Listo para el humo) para educar al público acerca de los riesgos de la exposición al humo y las acciones que la gente puede tomar para proteger su salud.



## El humo y su salud

[Preguntas frecuentes acerca del humo de los incendios forestales](#)

[Los incendios y su salud](#)

[Cómo puede el humo de los incendios afectar su salud](#)

[El humo de leña y su salud](#)

[La contaminación del aire y las enfermedades del corazón](#)

Las condiciones y pronósticos de calidad del

<https://www.epa.gov/air-research/smoke-ready-toolbox-wildfires>

<https://espanol.epa.gov/espanol/caja-de-herramientas-smoke-ready-listo-para-el-humo-para-incendios-forestales>

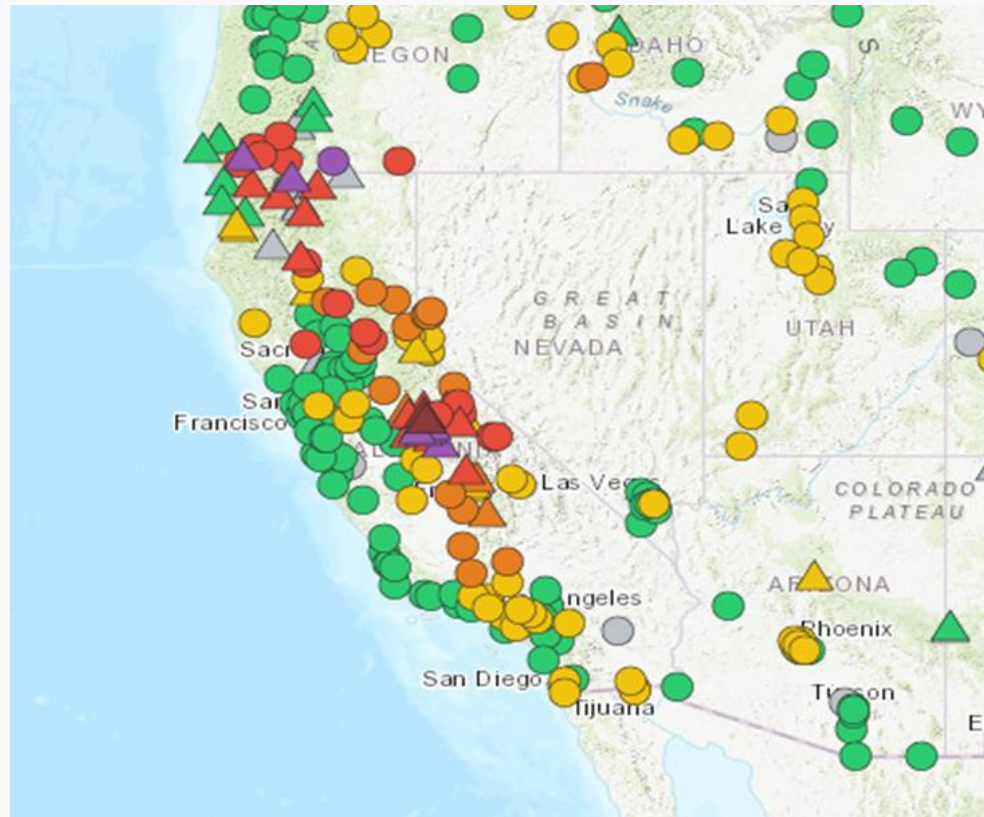


# Wildfire Resources: Monitors



## Temporary PM<sub>2.5</sub> monitors are available:

- in CA through ARB
- through the USFS' Wildland Fire Air Quality Response Program (ARAs)
- For tribes through EPA's Tribal Air Monitoring Support Center
- Some through NPS or other agencies with monitoring capabilities





# Wildfire: EPA Region 9 Efforts



- Coordinate with Federal, State, Tribal Agencies
- 2 staff serve as Air Resource Advisors on wildfire incidents providing monitoring, forecasting, and smoke communication
- Emergency Response: Hazardous Waste Cleanup
- Print and mail outreach materials – request from [stewart.kathleen@ep.gov](mailto:stewart.kathleen@ep.gov)
- Provide free sets of Air Quality Flags to communicate AQI – request from [stewart.kathleen@epa.gov](mailto:stewart.kathleen@epa.gov)
- Limited supply of N-95 respirator masks
- Technical assistance on monitoring, forecasting, outreach, exceptional events



Credit: Terri McCartney,  
Hopland Band of Pomo Indians



Questions?



# Thank You!

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